AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims

1. (Currently Amended) A method ~~for~~ of estimating a transmission channel in a digital communications system which operates in accordance with GSM specifications, said communications system including a receiver which receives a signal transmitted over the transmission channel, said receiver including a channel estimation-based equalizer, said equalizer having a window size adapted to the actual delay spread of the transmission channel, and said equalizer using an estimate of the transmission channel for synchronizing and correcting said received signal, said received signal including a 26-symbol training sequence, said method comprising:

~~using m+15 consecutive symbols near the end of said 26-symbol training sequence to estimate, without matrix operation, the transmission channel for different channel spans m, where $1 \leq m \leq 8$;~~

estimating without matrix inversion, the transmission channel for different channel spans m, where $1 \leq m \leq 8$, using at different synchronization points, the last m+15 consecutive symbols of the 26-symbol training sequence except for a group of symbols comprising the last four or fewer symbols;

wherein tap values for different synchronization points and tap positions are obtained in a two-dimensional recursive computation step for joint optimization of synchronization and window sizing of the equalizer using Least Square Error (LSE) criterion; and

wherein the tap values for different synch points are calculated in a 2-dimensional "north-west" direction.

2. (Canceled)

3. (Currently Amended) The method according to ~~claims 1 or 2~~ claim 1, wherein ~~said~~ the digital communications system operates in accordance with GSM/EDGE specifications.

4. (Canceled)

5. (Currently Amended) The method according to ~~claims 1 or 2~~ claim 1, wherein ~~said using step comprises~~ the estimating step includes using delayed (shifted) segments in the training sequence for ~~said~~ the estimation.

6-7. (Canceled)

8. (Currently Amended) ~~The method according to claim 1, wherein the consecutive _m_+15 symbols are the last but one _m_+15 symbols, where _m_ is the equalizer window size~~ A method for estimating a transmission channel in a digital communications system which operates in accordance with GSM specifications, said communications system including a receiver which receives a signal transmitted over the transmission channel, said receiver including a channel estimation-based equalizer, said equalizer having a window size adapted to the actual delay spread of the transmission channel, and said equalizer using an estimate of the transmission channel for synchronizing and correcting said received signal, said received signal including a 26-symbol training sequence, said method comprising:

estimating without matrix inversion, the transmission channel for different channel spans _m_, where $1 \leq m \leq 8$, using at different synchronization points, the last _m_+15 consecutive symbols of the 26-symbol training sequence except for a group of symbols comprising the last four or fewer symbols.

9. (Currently Amended) The method according to claim 1, wherein ~~said~~ the using step ~~comprises~~ includes using a Least Square Error (LSE) approach for ~~said~~ the estimation.

10. (Currently Amended) ~~The method according to claim 2,~~ A method of estimating a transmission channel in a digital communications system that operates in accordance with GSM specifications, said communications system including a receiver that receives a signal transmitted over the transmission channel, said receiver including a channel estimation-based equalizer, said equalizer having a window size adapted to the actual delay spread of the transmission channel, and said equalizer using an estimate of the transmission channel for synchronizing and correcting the received signal, the received signal including a 26-symbol training sequence, said method comprising:

estimating without matrix inversion, the transmission channel for different channel spans m, where $1 \leq m \leq 8$, using at different synchronization points, the last $m+15$ consecutive symbols of the 26-symbol training sequence except for a group of symbols comprising the last four or fewer symbols;

wherein tap values for different synchronization points and tap positions are obtained in a two-dimensional recursive computation step for joint optimization of synchronization and window sizing of the equalizer using Least Square Error (LSE) criterion; and

wherein ~~said using step comprises~~ the estimating step includes using an LSE approach for joint synchronization and equalizer window sizing.

11-23. (Canceled)